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| 09/722,950      | 11/27/2000  | Richard E. Smalley   | 11321-P002D1        | 5035             |

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EXAMINER

COLE, ELIZABETH M

| ART UNIT | PAPER NUMBER |
|----------|--------------|
|----------|--------------|

1771

DATE MAILED: 08/12/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

## Office Action Summary

Application No.

09/722,950

Applicant(s)

SMALLEY ET AL.

Examiner

Elizabeth M. Cole

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☐ Responsive to communication(s) filed on \_\_\_\_.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1 and 35-57 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1 and 35-57 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
  - ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_.
  - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- 1) ☐ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)  
Paper No(s)/Mail Date 7/25/02.
- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: \_\_\_\_.

### ***Double Patenting***

1. A rejection based on double patenting of the "same invention" type finds its support in the language of 35 U.S.C. 101 which states that "whoever invents or discovers any new and useful process ... may obtain a patent therefor ..." (Emphasis added). Thus, the term "same invention," in this context, means an invention drawn to identical subject matter. See *Miller v. Eagle Mfg. Co.*, 151 U.S. 186 (1894); *In re Ockert*, 245 F.2d 467, 114 USPQ 330 (CCPA 1957); and *In re Vogel*, 422 F.2d 438, 164 USPQ 619 (CCPA 1970).

A statutory type (35 U.S.C. 101) double patenting rejection can be overcome by canceling or amending the conflicting claims so they are no longer coextensive in scope. The filing of a terminal disclaimer cannot overcome a double patenting rejection based upon 35 U.S.C. 101.

2. Claim 1 is rejected under 35 U.S.C. 101 as claiming the same invention as that of claim 1 of prior U.S. Patent No. 6,183,714. This is a double patenting rejection.

3. The nonstatutory double patenting rejection is based on a judicially created doctrine grounded in public policy (a policy reflected in the statute) so as to prevent the unjustified or improper timewise extension of the "right to exclude" granted by a patent and to prevent possible harassment by multiple assignees. See *In re Goodman*, 11 F.3d 1046, 29 USPQ2d 2010 (Fed. Cir. 1993); *In re Longi*, 759 F.2d 887, 225 USPQ 645 (Fed. Cir. 1985); *In re Van Ornum*, 686 F.2d 937, 214 USPQ 761 (CCPA 1982); *In re Vogel*, 422 F.2d 438, 164 USPQ 619 (CCPA 1970); and, *In re Thorington*, 418 F.2d 528, 163 USPQ 644 (CCPA 1969).

A timely filed terminal disclaimer in compliance with 37 CFR 1.321(c) may be used to overcome an actual or provisional rejection based on a nonstatutory double patenting ground provided the conflicting application or patent is shown to be commonly owned with this application. See 37 CFR 1.130(b).

Effective January 1, 1994, a registered attorney or agent of record may sign a terminal disclaimer. A terminal disclaimer signed by the assignee must fully comply with 37 CFR 3.73(b).

4. Claims 35-57 are rejected under the judicially created doctrine of obviousness-type double patenting as being unpatentable over claims 1-19 of U.S. Patent No.

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6,790,425. Although the conflicting claims are not identical, they are not patentably distinct from each other because each claims an array of aligned nanotubes which is referred to as a rope in the instant application.

5. Claims 35-57 are provisionally rejected under the judicially created doctrine of obviousness-type double patenting as being unpatentable over claims 1-18 of copending Application No. 09/810,201. Although the conflicting claims are not identical, they are not patentably distinct from each other because each claims a parallel array of nanotubes which is referred to as a rope in the instant application.

This is a provisional obviousness-type double patenting rejection because the conflicting claims have not in fact been patented.

6. Claims 35-57 are provisionally rejected under the judicially created doctrine of obviousness-type double patenting as being unpatentable over claims 1-18 of copending Application No. 09/810,390. Although the conflicting claims are not identical, they are not patentably distinct from each other because each claims a parallel array of nanotubes which is referred to as a rope in the instant application.

This is a provisional obviousness-type double patenting rejection because the conflicting claims have not in fact been patented.

7. Claims 35-57 are provisionally rejected under the judicially created doctrine of obviousness-type double patenting as being unpatentable over claims 86-90, 94-95 of copending Application No. 10/027,726. Although the conflicting claims are not identical, they are not patentably distinct from each other because each discloses a fiber

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comprising a parallel array of nanotubes which is referred to as a rope in the instant application.

This is a provisional obviousness-type double patenting rejection because the conflicting claims have not in fact been patented.

8. Claims 35-57 are provisionally rejected under the judicially created doctrine of obviousness-type double patenting as being unpatentable over claims 81-90, 104-105, 111-112 of copending Application No. 10/033,050. Although the conflicting claims are not identical, they are not patentably distinct from each other because each claims a parallel array of nanotubes which is referred to as a rope in the instant application.

This is a provisional obviousness-type double patenting rejection because the conflicting claims have not in fact been patented.

9. Claims 35-57 are provisionally rejected under the judicially created doctrine of obviousness-type double patenting as being unpatentable over claims 91-98, 100-103, 163-182 of copending Application No. 10/033,076. Although the conflicting claims are not identical, they are not patentably distinct from each other because each discloses a bundle of nanotubes which is referred to as a rope in the instant application.

This is a provisional obviousness-type double patenting rejection because the conflicting claims have not in fact been patented.

10. Claims 35-57 are provisionally rejected under the judicially created doctrine of obviousness-type double patenting as being unpatentable over claims 94-97 of copending Application No. 10/034,745. Although the conflicting claims are not identical,

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they are not patentably distinct from each other because each claims a fiber comprising a plurality of aligned nanotubes which is referred to as a rope in the instant application.

This is a provisional obviousness-type double patenting rejection because the conflicting claims have not in fact been patented.

11. Claims 35-57 are provisionally rejected under the judicially created doctrine of obviousness-type double patenting as being unpatentable over claims 1-81 of copending Application No. 10/036,684. Although the conflicting claims are not identical, they are not patentably distinct from each other because each claims a parallel array of nanotubes which is referred to as a rope in the instant application.

This is a provisional obviousness-type double patenting rejection because the conflicting claims have not in fact been patented.

12. Claims 35-57 are provisionally rejected under the judicially created doctrine of obviousness-type double patenting as being unpatentable over claims 141-152, 163-194 of copending Application No. 10/033,228. Although the conflicting claims are not identical, they are not patentably distinct from each other because each discloses a plurality of carbon nanotubes.

This is a provisional obviousness-type double patenting rejection because the conflicting claims have not in fact been patented.

13. Claims 35-57 are provisionally rejected under the judicially created doctrine of obviousness-type double patenting as being unpatentable over claims 112-141 of copending Application No. 10/038,204. Although the conflicting claims are not identical,

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they are not patentably distinct from each other because each claims an ordered array of carbon nanotubes.

This is a provisional obviousness-type double patenting rejection because the conflicting claims have not in fact been patented.

14. Claims 38-44 are provisionally rejected under the judicially created doctrine of obviousness-type double patenting as being unpatentable over claims 28-44 of copending Application No. 10/189,129. Although the conflicting claims are not identical, they are not patentably distinct from each other because each discloses aligned carbon nanotubes in the form of fibers.

This is a provisional obviousness-type double patenting rejection because the conflicting claims have not in fact been patented.

15. Claims 35-57 are provisionally rejected under the judicially created doctrine of obviousness-type double patenting as being unpatentable over claims 53-54 of copending Application No. 10/324,861. Although the conflicting claims are not identical, they are not patentably distinct from each other because discloses a rope comprised of carbon nanotubes.

This is a provisional obviousness-type double patenting rejection because the conflicting claims have not in fact been patented.

16. Claims 35-57 are provisionally rejected under the judicially created doctrine of obviousness-type double patenting as being unpatentable over claims 12-25 of copending Application No. 10/391,988. Although the conflicting claims are not identical,

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they are not patentably distinct from each other because discloses ropes or arrays of carbon nanotubes.

This is a provisional obviousness-type double patenting rejection because the conflicting claims have not in fact been patented.

17. Claims 35-57 are provisionally rejected under the judicially created doctrine of obviousness-type double patenting as being unpatentable over claims 35-54 of copending Application No. 10/426,478. Although the conflicting claims are not identical, they are not patentably distinct from each other because discloses a rope comprising carbon nanotubes.

This is a provisional obviousness-type double patenting rejection because the conflicting claims have not in fact been patented.

18. Claims 35-57 are provisionally rejected under the judicially created doctrine of obviousness-type double patenting as being unpatentable over claims 91-97 of copending Application No. 10/635,976. Although the conflicting claims are not identical, they are not patentably distinct from each other because each discloses carbon fibers (or ropes) comprising a plurality of aligned carbon nanotubes.

This is a provisional obviousness-type double patenting rejection because the conflicting claims have not in fact been patented.

19. Claims 35-57 are provisionally rejected under the judicially created doctrine of obviousness-type double patenting as being unpatentable over claims 46-54 of copending Application No. 10/730,630. Although the conflicting claims are not identical,



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they are not patentably distinct from each other because each claims ropes formed from carbon nanotubes.

This is a provisional obviousness-type double patenting rejection because the conflicting claims have not in fact been patented.

***Claim Rejections - 35 USC § 112***

20. Claims 36-57 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. It is not clear how the claimed felts and mats differ from each other. What are the differences in structure between a felt and a mat in this context? The specification at page 26, lines 19-21, describes a felt as being a mat so it is not clear what the difference is between the two.

***Claim Rejections - 35 USC § 102***

***Claim Rejections - 35 USC § 103***

21. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

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22. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 35-57 are rejected under 35 U.S.C. 102(b) as anticipated by or, in the alternative, under 35 U.S.C. 103(a) as obvious over "Growth morphologies during cobalt-catalyzed single-shell carbon nanotube synthesis". "Growth morphologies" discloses a material which comprises all single wall carbon nanotubes wherein the nanotubes are in the form of web and/or strings which correspond to the claimed felt/mat and rope. See page 509, last three lines; page 515, first full paragraph. The nanotubes have diameters of about 1.2 –1.3 nm which corresponds to the claimed diameter of about 1.3 Angstroms. With regard to claim 45, while "Growth morphologies" does not disclose the recited method of forming the ropes, claim 45 is drawn to a product. Product by process claims are not limited to the manipulations of the recited steps, only the structure implied by the steps. "Even though product - by process claims are limited by and defined by the process, determination of patentability is based on the product itself. The patentability of a product does not depend on its method of production. If the product in the product - by - process claim is the same as or obvious from a product of the prior art, the claim is unpatentable even though the prior product was made by a different process." *In re Thorpe*, 227 USPQ 964, 966 (Fed. Cir. 1985).

Once the Examiner provides a rationale tending to show that the claimed product appears to be the same or similar to that of the prior art, although produced by a

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different process, the burden shifts to applicant to come forward with evidence establishing an unobvious difference between the claimed product and the prior art product. In re Marosi, 218 USPQ 289, 292 (Fed. Cir. 1983).

The use of 35 USC 102/103 rejections for product by process claim has been approved by the courts. "[T]he lack of physical description in a product - by - process claim makes determination of the patentability of the claim more difficult, since in spite of the fact that the claim may recite only process limitations, it is the patentability of the product claimed and not of the recited process steps which must be established. We are therefore of the opinion that when the prior art discloses a product which reasonably appears to be either identical with or only slightly different than a product claimed in a product - by - process claim, a rejection based alternatively on either section 102 or section 103 of the statute is eminently fair and acceptable. As a practical matter, the Patent Office is not equipped to manufacture products by the myriad of processes put before it and then obtain prior art products and make physical comparisons therewith." In re Brown , 173 USPQ 685, 688 (CCPA 1972). Therefore, the burden is shifted to Applicant to come forward with evidence establishing an unobvious difference between the claimed product and the product of "Growth Morphologies".

"Growth morphologies" does not disclose the claimed number of nanotubes in the rope or the basis weight of the claimed felt. When the reference discloses all the limitations of a claim except a property or function, and the examiner cannot determine whether or not the reference inherently possesses properties which anticipate or render obvious the claimed invention the examiner has basis for shifting the burden of proof to

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applicant as in *In re Fitzgerald*, 619 F.2d 67, 205 USPQ 594 (CCPA 1980). See MPEP § § 2112- 2112.02. Therefore, since "Growth Morphologies" appears to disclose the claimed ropes and mats/felts in the form of "strings" and "webs", the burden is shifted to Applicant to show that the materials disclosed in "Growth Morphologies" are different from the claimed invention.

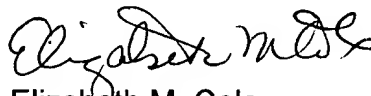
23. Applicant's arguments regarding the previous rejection are persuasive. The rejection is withdrawn. A new rejection is set forth above.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Elizabeth M. Cole whose telephone number is (571) 272-1475. The examiner may be reached between 6:30 AM and 6:00 PM Monday through Wednesday, and 6:30 AM and 2 PM on Thursday.

Mr. Terrel Morris, the examiner's supervisor, may be reached at (571) 272-1478.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

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Elizabeth M. Cole  
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